

Notice of Allowability**Application No.**

09/105,117

Examiner

Rita Mitra

Applicant(s)

VRLJC ET AL.

Art Unit

1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/17/2004.
2. ☒ The allowed claim(s) is/are 1,4-8,10-14,17,20,43 and 46-48.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 10/22/20.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 03/13/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Status of the Claims

Applicants' request for a Continued Prosecution Application (CPA) under 37 C.F.R. 1.53(d) and a preliminary amendment and reply in response to office action dated December 3, 2003, filed on January 17, 2004 is acknowledged. Claims 2, 3, 15, 16, 18, 19 have been canceled. No new claims have been added. Claims 43, 46-48 found allowable in the Advisory Action dated December 3, 2003. Therefore, claims 1, 4-8, 10-14, 17, 20 are currently pending.

Response to Amendments

The rejection of claims 1 and the dependent claims 4-8, 10-14, 17 and 20 under **35 U.S.C. 112, first paragraph** is withdrawn in view of applicants' amendment to claim 1.

The rejection of claims 2, 3, 15, 16, 18 and 19 under **35 U.S.C. 112, first paragraph** is moot because these claims have been cancelled.

An **Examiner's Amendment** to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Examiner's Amendments to the Specification

Continuing data has been entered on page 1, line 1, which reads as:
This application is a 371 of PCT/DE96/02485 filed on December 18, 1996, which claims benefit of a foreign (German) application 195 48 222.0 filed on December 22, 1995.

Examiner's Amendments to the Claims

Non-elected claims 21-42 have been canceled.

Claims have been amended to read as:

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1. (twice amended) A process for the microbacterial production of amino acids, comprising the steps of:

1) providing a microbial organism having [a certain] amino acid export carrier activity and [a certain] having export gene-expression,

2) increasing[, selectively,]one of the export carrier activities of said microbial organism, wherein said export carrier has the amino acid sequence SEQ ID NO: 2, and [specific for a particular amino acid with an amino acid sequence as given in SEQ NO: 2 in accordance with] the export carrier activity is endogenous to said microbial organism, and

3) increasing the export gene expression of said export carrier [microbial organism specific for a particular amino acid], wherein said gene comprising [with a nucleotide sequence of] nucleotides 1016 to 1726 [according to] of SEQ ID NO: 1 [in accordance with the export gene expression endogenous to said microbial organism] by means of one of the steps selected from the group of:

i) increasing the number of gene copies of the export carrier gene,

ii) modifying regulatory signals assigned to the export carrier gene, and

iii) amplifying regulatory signals assigned to the export carrier gene,

whereby amino acids are produced by said microbial organism with increased efficiency, and

[iv] 4) recovering the amino acids from the culture.

2. (canceled).

3. (canceled).

4. (twice amended) [A] The process according to claim 1, wherein the export carrier gene expression of the export carrier is increased by increasing the number of gene copies, whereby the export carrier gene is expressed from the additional gene copies.

5. (amended) [A] The process according to claim 4, wherein, in order to increase the number of export carrier gene copies, the export gene is [installed in] inserted into a gene construct.

6. (amended) [A] The process according to claim 5, wherein the export carrier gene is [installed in] inserted into a vector with a low number copies.

7. (twice amended) [A] The process according to claim 5, wherein the export carrier gene is [installed in] inserted into a gene construct, which includes regulatory gene sequences operably linked to the export carrier gene.

8. (twice amended) [A] The process according to claim 7, wherein the regulatory gene sequence includes a nucleotide sequence 1421-2293, coding for the amino acid sequence as given in SEQ ID NO: 3 [from nucleotide 1421-2293].

9. (canceled).

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10. (twice amended) [A] The process according to claim 5, wherein [a] the microorganism producing the respective amino acid is transformed with the gene construct [including the export gene].

11. (amended) [A] The process according to claim 10, wherein [a] the microorganism [of] is the type *Corynebacterium* [transformed the gene construct including the export gene].

12. (twice amended) [A] The process according to claim 10, wherein, for the transformation, a microorganism is utilized in which the enzymes which participate in the synthesis of the corresponding amino acids are deregulated.

13. (twice amended) [A] The process according to claim 10, wherein, for the transformation, a microorganism is utilized, which contains an increased amount of the metabolites of the central metabolism.

14. (twice amended) [A] The process according to claim 4, wherein the export gene is isolated from a microorganism strain of the type *Corynebacterium*.

15. (canceled).

16. (canceled).

17. (twice amended) [A] The process according to claim 1, wherein the export gene expression is increased by amplifying the transcription signals.

18. (canceled)

19. (canceled)

20. (amended) [A] The process according to claim 1 for the manufacture of L-lysine.

43. (twice amended) A process for the increased microbial production of amino acids using an export carrier gene, comprising the steps of:

- i) constructing a gene construct including an export carrier gene,
- ii) inserting said construct into a suitable vector,
- iii) transforming a suitable host cell with said vector,
- iv) cultivating said transformed host cell in a culture medium,
- v) recovering the amino acid(s) from the culture, and
- vi) determining the desired amino acid(s) amount.

44. (canceled).

45. (canceled).

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46. (twice amended) [A] The process according to claim 43, wherein the gene construct additionally carries regulatory gene sequences.

47. (twice amended) [A] The process according to claim 43, wherein an export carrier gene from *Corynebacterium* is utilized.

48. (twice amended) [A] The process according to claim 43, wherein *Corynebacterium* is used as amino acid producing microorganism.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Klaus Bach on March 13, 2004.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach or suggest a process for the microbacterial production of amino acids, comprising the steps of: providing a microbial organism having amino acid export carrier activity and having export gene expression; wherein the export gene with the nucleotide sequence of nucleotide 1016 to 1726 of SEQ ID NO: 1, coding for the amino acid sequence of SEQ ID NO: 2 is utilized. A process wherein the regulatory gene sequence includes a nucleotide sequence coding for the amino acid sequence of SEQ ID NO: 3. The boosted expression or activity of the export carrier resulting from this process increases the secretion rate and thus increases transport of the desired amino acid.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1, 4-8, 10-14, 17, 20, 43, 46-48 are allowed.

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Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rita Mitra whose telephone number is (571) 272-0954. The Examiner can normally be reached from 9:30 a.m. to 6:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Christopher Low, can be reached at (571) 272-0951. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Fax Center number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-0547.



Rita Mitra, Ph.D.
March 13, 2004



KAREN COCHRANE CARLSON, PH.D.
PRIMARY EXAMINER